

Key elements for improving supplementary immunization activities for polio eradication



**DEPARTMENT OF VACCINES
AND BIOLOGICALS**



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1. Introduction

Polio transmission has been interrupted in the Region of the Americas, the Western Pacific and the European Regions.

Progress is impressive in all other parts of the world as indicated by:

- National Immunization Days (NIDs) and surveillance for acute onset flaccid paralysis (AFP) in countries with recent or ongoing conflict: Afghanistan, Democratic Republic of the Congo (DRC), Liberia, Sierra Leone, Somalia and southern Sudan.
- Improved AFP surveillance in all endemic countries.
- 90% decrease in the number of cases.
- Decrease of the number of virus strains in many endemic countries.
- Polio virus type 2 is on the verge of extinction.

The eradication of polio in more than 100 countries, including many with extremes of climate, difficult access, weak health systems, and/or conflicts, has demonstrated the effectiveness of the polio eradication strategies

**Polio can be eradicated if the recommended strategies
are implemented effectively!**

This guideline is a supplement to the Polio Field Guide. It's purpose is to highlight the key elements for planning and implementing successful NIDs and mop-up campaigns.

2. Work plan

Work plans should clearly define persons, tasks, responsibilities and deadlines at all levels. They need to be continuously updated and shared with partners at different levels.

A spreadsheet (Excel or other) can be helpful to organize the data on the basis of dates, persons, tasks, etc. (see annex 2 for an example of a work plan).

Work plans must be clear, action-oriented, and have sufficient detail.

A work plan should be organized by category of activities (e.g. social mobilization, logistics, training) and should list specific tasks (e.g. contact the radio station, repair the refrigerated truck, print training materials) under each category. Work plans that are too vague and too general will rarely be followed up.

3. Adequate balance between responsibilities of different levels

Polio transmission was interrupted in countries where excellent micro-planning ensured vaccination of all children under five years of age. Adequate autonomy is needed at regional, district and health centre levels to adapt the national guidelines to local constraints.

Specific national responsibilities

- Drafting national plan, dates, budget, etc.
- Monitoring at all levels.
- Feedback and information to all levels.
- Providing final evaluation.

Specific subnational responsibilities

- Micro-planning.
- Subnational monitoring.
- Feedback and information to national and lower levels.

4. House-to-house immunization

A strategy shift from fixed site to mobile vaccination strategies is required in the final battles against polio. This is called 'house-to-house' immunization, but it has also been called 'boat-to-boat', 'child-to-child' or 'household-to-household' immunization, depending where the teams actually have to go to reach the children (Table 1).

In countries where this was recently implemented coverage increased by 10–40% compared to the previously conducted campaigns. Large numbers of children were found who were never immunized before, neither through the routine Expanded Programme on Immunization (EPI) nor during NIDs.

Table 1: The differences between house-to-house and fixed site immunization

Fixed strategy	House-to-house
Children go to the post	Teams go to the children in the household
150-300 children immunized per team per day	50-150 children immunized per team per day
Usually 2-3 days	May be up to a week
Teams of 2-4 persons	Teams of 2 persons
Community involvement and micro-planning important	Community involvement and micro-planning crucial

House-to-house immunization can be implemented nationwide, but should definitely be the choice for risk areas, including areas with:

- Ongoing or recent polio transmission.
- Inadequate surveillance.
- Low routine/NID coverage.
- Limited access to health services.
- Hard to reach populations .
- Displaced populations.
- Borders with endemic zones/countries.

5. Social mobilization

Effective social mobilization is critical to ensure parents bring their children to the immunization sites (or remain at home if a house-to-house strategy is implemented).

In the vast majority of cases where children were not brought for immunization, it was simply because their parents did not know they had to bring them.

Critical issues for successful social mobilization are:

- Timely involvement of national (president), regional and district authorities to ensure political support.
- Involvement of religious and community leaders. They are usually best informed on how, where and when to reach the population.
- The use of community associations. They can release tremendous amounts of community resources in the form of knowledge of local conditions, skills, manpower, money, means of transport, and other equipment.
- Consistency in the message. Messages that change repeatedly during the preparation will lead to confusion and decreased participation in NIDs and mop-ups.
- The following messages, delivered in the language understood locally, are important:
 - the purpose of the campaign (to eradicate polio);
 - supplementary (all children under five years of age should be vaccinated regardless of prior vaccinations);
 - dates and location.

Social mobilization during the campaign is as important as before the event.

-
- Begin intense social mobilization about 10 days before the mop-up so that all communities receive information about the reason and dates of the house-to-house vaccinations. Use all means necessary to provide information including radio/TV, loudspeakers, newspapers, posters and banners, speeches by religious leaders, and ceremonies.
 - Social mobilization should be continued during the NIDs to have the greatest effect. Many people will only go to the site when there is proof of the presence of the teams. This can be achieved by the following:
 - megaphones to be continuously used by a member of the team, or by a member of the community, mosques and churches;
 - publicity by artists and sport figures may have a tremendous impact on the awareness of the people.

6. Micro-planning

Evaluations in many countries show that the same population groups are often missed by the routine programme as well as by supplemental immunization campaigns.

These groups may consist of people who are difficult to reach (nomads, boat people, etc.). Less obvious however are the pockets of unreached children in densely populated areas. They may remain undetected, because of specific socioeconomic status, religious conviction and unreliable demographic data, (e.g. urban slum dwellers).

These groups must be identified in micro-plans and special activities must be implemented to ensure they are immunized.

Some population groups are always missed. These groups must be identified and special activities implemented to ensure they are immunized

Requirements for successful micro-planning include:

- Planning responsibility should be delegated to the administrative level (e.g. district or village) where the activities will take place.
- Plans should be based on local conditions, accessibility, geography, population movements, working hours (when people are home) culture and so on in the catchment area.

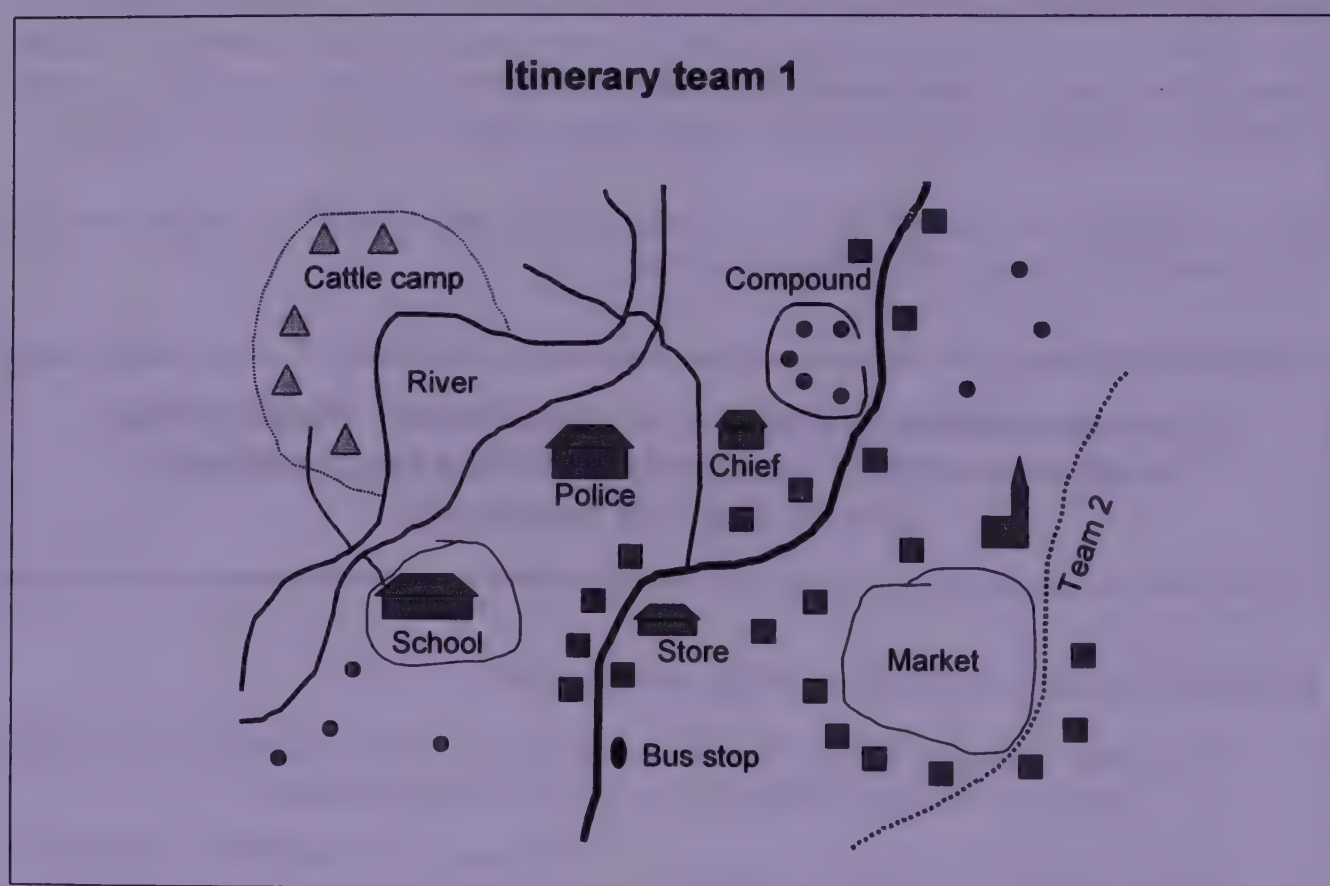
NIDs can only be of high quality if micro-plans are based on local capabilities and constraints.

- Micro-plans must target all children under five years of age, but special attention has to be paid to the risk areas defined in section 4.
- Each team must have a map and itinerary for the area it will cover. It has been shown repeatedly that even people originating from a given area will miss children if they do not have a map and itinerary to guide them.

For each local area and each team, find or draw a map that indicates:

- each settlement's location and type (urban/rural);
- major landmarks (e.g. rivers, bridges, health centres, schools, markets, nurseries, train/bus station, etc.);
- roads and terrain.

Figure 1: Example of detailed map and itinerary for vaccination teams



- Adapt oral polio vaccine (OPV) needs on the basis of experience and constraints.
 - countries where house-to-house immunization has been implemented need 10–40% more vaccine to immunize children never reached before and not accounted for in official population statistics;
 - plan on the basis of experience from previous NIDs;
 - give additional vaccine to teams that go to areas with difficult access and uncertain population size.

- Plan for a larger number of vaccination teams to implement a house-to-house strategy (see Table 1 on page 4).
 - determine the number of teams required to reach all houses/residences by actually sending teams to some typical areas before the campaign to test how many children can be immunized, leaving enough time to revisit houses where necessary;
 - in rural areas, allow time for travel; some teams may be able to reach only 30–50 residences/day.

Immunize each and every child: the estimated target population should serve as a guide and not as a maximum objective.

- Adapt logistics needs to the chosen strategy:
 - cold chain requirements are different for house-to-house campaigns than for the fixed-site strategy;
 - determine how the cold chain will be used (see section 10);
 - determine the number of vehicles, boats, bicycles, donkeys and so on needed to transport vaccination teams and vaccine/supplies to every residence;
 - consider how houses will be marked (chalk can be used) to indicate houses which have been visited or which need to be visited again because of missed children;
 - when house-to-house immunization is combined with fixed sites in strategic places like markets, it is useful to consider marking children. Gentian violet or another marking substance can be used;
 - determine the number of supervisors needed. Supervisors help to plan and oversee the delivery of OPV, review daily plans with the teams, ensure that plans are implemented, take corrective action when necessary and solve problems for teams when obstacles arise (see below);
 - calculate the resources that will be required for transportation, fuel, additional staff, per diem if required, ice, overnight stays for staff in rural areas, etc.
- Clear instructions are needed about how to deal with children not found at home. Children may be absent for a number of reasons. Many will accompany their mother to the field or other workplace and only come back in the evening. The planning of the teams must allow for extraordinary working hours to find those children.

A team that is not equipped with a map of the area and an itinerary for covering the area will certainly miss children.

7. Recording

- The proportion of zero-dose children found is a strong indicator of the quality of the routine programme and previous campaigns/rounds. If 'zero-dose monitoring' is used in a country, careful consideration should be given to the methods for collecting this data, the preference being to use properly trained supervisory teams for this purpose.
- Line listing of children before NIDs is not recommended, because:
 - the lists are rarely used by the vaccinator;
 - if they are used, they slow down the campaign, discouraging mothers from attending the sites;
 - they may give a false sense of security and discourage health workers from looking for more children;
 - they may discourage mothers from visiting the site when their children are not on the list.

8. Supervision

High quality supervision is an indispensable part of NIDs. Many NIDs are unsuccessful because of an insufficient number of supervisors, insufficiently trained supervisors or supervisors without the appropriate tools and means of transport.

Key elements of quality supervision are:

- Training of responsible supervisors. Before beginning the house-to-house delivery of OPV, supervisors should:
 - walk or drive through the areas where their vaccination teams will be working and develop a reasonable daily itinerary for each team;
 - agree with teams on contingency plans if problems arise (e.g. when to visit houses again if children are away during the initial visit);
 - assist in mobilizing the community, including identifying village chiefs, mayors and other officials who can assist.
- Following the strategy, supervisors must ensure that:
 - all areas and houses are visited, including isolated communities, mountainous areas, and apartment dwellers on top floors;
 - all children under five years receive two drops of OPV;
 - all teams use the vaccine vial monitor (VVM) to ensure delivered OPV is potent;
 - tally sheets are completed immediately after each home visit;
 - trend in immunization of zero-dose children is monitored;
 - teams file daily reports about results and problems;
 - teams are replenished in case they run out of vaccine;
 - gaps are identified, problems solved, and the strategy revised as necessary;
 - problems are solved! (e.g. if a community refuses vaccine, the supervisor should intervene. If a team runs out of OPV, the supervisor should provide or obtain more OPV.);
 - houses are being marked to indicate that the house has been visited and all children under five years have or have not been vaccinated;
 - progress and problems are communicated to the mop-up coordinator;
 - vaccination teams return to closed homes (no one was at home during time of visit) or houses in which one or more children under five years was away from home during the visit;
 - results are collected and reviewed with teams at the end of each day;

- logistics and supplies are prepared for the next days work;
 - a report is prepared to summarize the vaccination activities and suggest improvements for the next round;
 - additional training is provided to the teams not performing well; and team members are replaced as necessary;
 - spot checks (convenience sample surveys) are done to determine any areas in which children are being missed; and corrective action is taken as needed;
 - lessons learned are incorporated for next rounds.
- The number of supervisors should be calculated on the basis of how much time it takes to fulfil these tasks. The numbers below are therefore merely guidelines, to be verified locally.

urban:	one supervisor for 10 teams
peri-urban:	one supervisor for 8 teams
rural:	one supervisor for 5 teams
 - Supervisors have the tendency to go only where the teams go. It is crucial supervisors pay special attention to:
 - risk areas (see the description above);
 - areas and population groups where teams do not like to go, e.g. slums.

These are the areas/populations usually missed during successive NIDs and that constitute the source of persistent transmission.

Supervisors must pay attention to high-risk areas and go where the teams do not like to go.

- Ensure mobility. No matter how many supervisors are trained, if they are not mobile, they can not supervise properly.
- Supervisory checklists should be designed for use during visits to the immunization sites. These lists should be simple, basic, action-oriented and, at most, one page long.

Three kinds of checklists can be considered:

 - a checklist to be used when the supervisor visits the site (Annex 3);
 - a simple questionnaire (Annex 4) to ask questions of people actually visiting the health centre. Its purpose is to collect information on the effectiveness of the messages communicated to the population;
 - a simple questionnaire for asking people in the street whether their children were immunized and if not, why.

9. Evaluation of NIDs and mop-up

- Coverage figures may be very deceptive. Polio coverage in the Netherlands is well over 95% and yet a polio epidemic struck a small part of the population that refuses immunization for religious reasons. Many epidemics have occurred in countries where clusters of unimmunized children remained undetected.
- AFP surveillance is the gold standard for evaluating the quality of NIDs. If NIDs have been successful in reaching all target children, cases of polio will decline sharply.

The only true indicator for the success of NIDs is AFP surveillance

- The quality of NIDs can also be measured by examining the following indicators:
 - Was training conducted for all NID staff and volunteers?
 - Was micro-planning conducted including mapping of local areas?
 - Was the cold chain implemented and managed according to standards? Were VVMs properly used?
 - Were VVMs still showing potent vaccine when examined by supervisors?
 - Were all areas of the country accessed? What proportion of households were missed in an area?
 - What is the trend in zero-dose children?
 - Was social mobilization carried out such that banners were widely visible at all vaccination posts and all parents of target children were reached by television, radio, or loudspeaker announcements?
 - Was the number of supervisors sufficient?
 - Were supervisory checklists completed? Were results analysed and corrections made?
 - Was there timely availability of funds?

-
- Surveys using simple convenience samples immediately following completion of NIDs are useful for getting an indication of areas in which all target children have not been reached. Volunteers, including Rotarians, students, Peace Corps volunteers etc., can be especially helpful for evaluating NIDs. Some strategies for selecting convenience samples are suggested below. They all have in common that areas are looked for where children are most likely to be missed:
 - interview 10 mothers/fathers of target-age children in an area near the vaccination post; interview 10 mothers/fathers in an area furthest from the vaccination post but within the catchment area;
 - interview 10 mothers/fathers of target-age children in the poorest section of the catchment area, e.g. slum area, or at the top floor of large apartment buildings;
 - interview 10 mothers/fathers of target-age children in the market, bus station or train station.
 - It is important that the Inter-Agency Coordinating Committee (ICC) insist on plans for evaluating NIDs and mopping-up quality before these events occur, and that information from AFP data, process evaluation, and convenience samples is analysed to determine whether the quality of NIDs was adequate. Steps to improve future rounds of NIDs should be based on information obtained during monitoring and evaluation of NIDs.

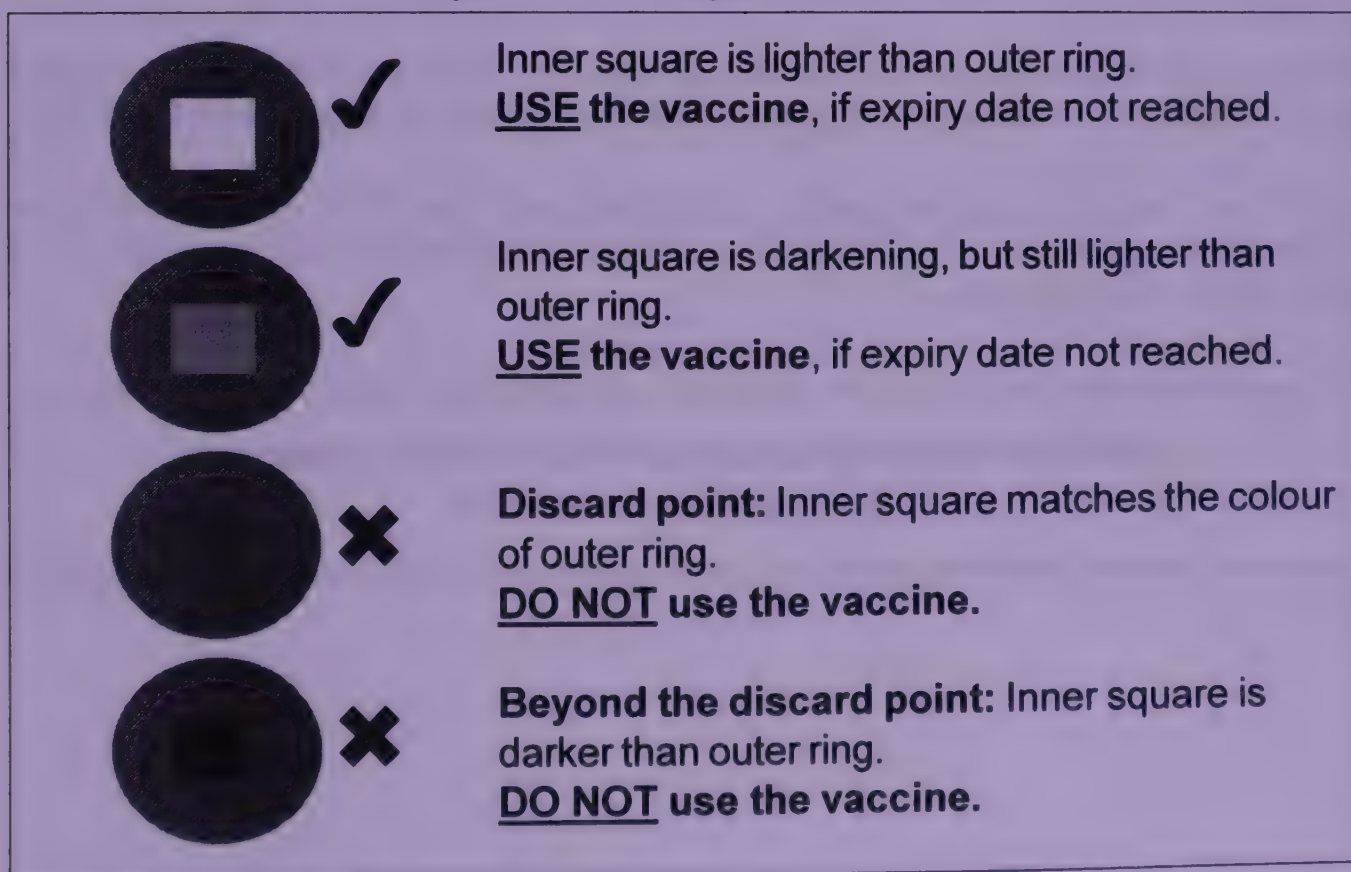
10. Cold chain

The cold chain has been one of the main obstacles to overcome for the implementation of high quality campaigns. To reach all children, a considerable investment has to be made in cold chain and training.

Oral polio vaccine is the most heat sensitive of all EPI vaccines. Storage and transport have to comply with good cold chain practices. However, cumulative heat exposure can now be monitored with the help of the VVM,¹ which can be found on all OPV supplied by UNICEF since 1996.

A heat sensitive square within a circle (Figure 1) changes colour under the combined influence of heat and time. If after exposure to heat for a certain amount of time, the square reaches the same colour, or becomes darker than the circle, the vial should be discarded.

Figure 2: The stages of the VVM



¹ Making use of Vaccine Vial Monitors; Flexible vaccine management for polio supplementary immunization activities. Geneva, World Health Organization, 2000 (WHO/V&B/00.14).
Vaccine vial monitor – Training guidelines. Geneva, World Health Organization, 1996 (WHO/EPI/LHIS/96.04 – update planned for 2000).
Vaccine vial monitor and open vial policy. Geneva, World Health Organization, 1996 (WHO/EPI/LHIS/96.01 – update on Multi dose vial policy in process).

OPV, supplied by WHO-accredited manufacturers, retains *satisfactory potency for at least 48 hours at an ambient temperature of 37°C*. The VVM reaches the point where OPV should be discarded before that.

At lower temperatures the loss of potency is considerably slowed down and the time taken for the VVM to reach the discard point increases substantially.

Table 1 gives the WHO/UNICEF specification of VVMs for OPV. It shows that, for example, *at 25°C continuous ambient temperature the VVM will reach the discard point only after 7 days*.

Table 2: VVM reaction rate for OPV²

Continuous ambient temperature	Number of days before OPV VVM reaches the discard point
+ 37°C	1.5 - 2 Days
+ 25°C	7 Days
+ 4°C	180 Days (6 months)
- 20°C	2 years

The VVM allows the user to see at any time *if OPV can still be used in spite of possible cold chain interruptions*. If necessary, health staff and management can then take the required corrective measures.

This makes it feasible and justifiable to use the VVM *to plan a more flexible, less stringent and cheaper cold chain*, which is of particular importance for NIDs.

OPV *can be safely used beyond the cold chain until the VVM reaches the discard point*. The length of time will depend on ambient temperatures and *the quality of the cold chain until that point*.

With the VVM, the absence of ice is not a reason to interrupt immunization

² Equipment performance specifications and test procedures. E6: Temperature monitoring devices. Geneva, World Health Organization, 1997 (WHO/EPI/LHIS/97.09).

The advantages of the use of VVMs during NIDs are:

- Teams can go further in time and geographic distance, due to less bulky equipment and decreased dependence on re-supply of ice.
- Difficult access and weak cold chain cease to be reasons not to immunize population groups usually missed during NIDs and routine services.
- Because fewer icepacks are required, freezing can be faster, using less equipment.
- Cold chain costs can decrease due to these factors.
- Health worker and stock manager can decide which vials to use first or in nearby areas on the basis of the change of colour of the VVM.
- *Reduction of wastage.* With the help of the VVM several countries have abandoned the policy of discarding OPV vials at the end of a session or in case of cold chain failure. This has led to important reduction in wastage from a previous 25% to 10% or lower. Experience in many countries now shows that few VVMs reach the discard point during the campaigns.
- *Pro-active management should lead to a tailor made cold chain,* combining VVM and equipment specifications on the one hand with excellent micro-planning and sensitized health workers on the other. This contrasts with the traditional top-bottom and “ice everywhere” approach.

11. The final checklist

Questions

- Are all relevant persons, agencies and associations at all levels involved: president, other relevant ministries, community leaders, international and national nongovernmental organizations (NGOs)?
- Are work plans made and followed up?
- Do the micro-plans:
 - include maps and itineraries for each team?
 - include flexible working hours to ensure immunization of all children?
 - use lessons learned from previous campaigns and from other areas or countries?
 - include additional teams/efforts for difficult areas with high population density?
- Are the micro-plans:
 - based on realistic assumptions of how many children a team can really immunize per day?
 - used to revisit and adapt the national plan?
- Is coverage of the following areas/groups planned for:
 - populations requiring a non-standard approach, like nomads or boat people?
 - slums and other areas with poor sanitary conditions and low access to health services?
 - populations opposed to immunization?
 - markets, bus stations, border crossings, water ways?
 - areas with low NID or routine coverage?
 - other risk areas?
- Are logistics issues sufficiently prepared?
 - is vaccine available in the right place and at the right time?
 - are refrigerators and freezers installed where they are needed?
 - are health workers trained in the use of the VVM?
 - is mobility ensured for teams and supervisors?
 - are funds available at the appropriate levels?

-
- Was social mobilization conducted on time?
 - Did social mobilization:
 - use materials that are understandable, available, with wide access and in the right language?
 - continue during the campaign?
 - make maximum use of celebrities, artists, politicians, religious leaders?
 - adopt a non-routine approach for a non-routine programme?

Annex 1:

Fifteen keys to planning successful NIDs

1) **Ensure high-level commitment and consensus:**

- Among national authorities and major partner agencies.
- Commitment that NIDs will take place and consensus on how they will be carried out.
- Establish/verify existence of an Inter-Agency Coordinating Committee (ICC).

2) **Ensure strong leadership**

The NIDs coordinator should:

- Have strong leadership and managerial skills.
- Be given adequate authority to plan and implement NIDs.
- Work closely with the national EPI manager to ensure consistent policies and enhancement of the routine programme.

3) **Ensure adequate financial resources**

- Prepare and submit a realistic budget to the appropriate national authorities and partner agencies.
- Include vaccines, supplies/equipment, transport, training, social mobilization, personnel (per diem), administration and communications costs in the budget.
- Verify the method and lead time to access funds.

4) **Start planning in advance**

- Minimize last minute frenzy!
- Choose appropriate dates:
 - during the low season of poliovirus transmission;
 - synchronized with neighboring countries;
 - not during events that would distract from NIDs (unless doing them simultaneously would enhance NIDs).
- Hold an ICC meeting.

5) **Involve other sectors**

- From the beginning involve other government departments, the private sector, nongovernmental organizations, the religious sector, schools and communities.
- Fully acknowledge their involvement before, during and after NIDs!
- Involvement will differ by country but might include:
 - providing cold boxes, thermos flasks or space in refrigerators and/or freezers;
 - preparing meals for volunteers;
 - making posters and banners;
 - making house-to-house visits for social mobilization;
 - providing transport (note: sufficient transport for NIDs is rarely available within the MOH alone).

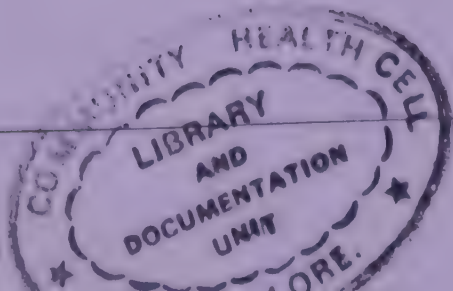
6) **Correctly calculate and characterize the target population**

- Make standard and consistent calculations at all levels to calculate target populations and vaccine needs.
- The central level should specify which formula and which census data should be used.
- Always overestimate rather than underestimate needs.
- Use maps to visualize distances and locations of posts, special populations, transportation routes and storage points and include itinerary for house-to-house teams.

7) **Determine per region which strategy is most appropriate for reaching all children on basis of a risk area assessment and operational feasibility: house-to-house, fixed sites, mobile teams**

Risk areas include areas with:

- Ongoing or recent polio transmission.
- Inadequate surveillance.
- Low routine/NID coverage.
- Limited access to health services.
- Hard-to-reach populations.
- Displaced populations.
- Borders with endemic zones/countries.



8) Establish structure and designate responsibilities

- Each administrative level should have a NIDs coordinator, a logistics committee and a social mobilization committee.
- An established structure will permit a “cascade effect” for communications, planning, distribution of supplies, training, supervision and social mobilization.

9) Develop a work plan (who, what, when, where)

- The central level should develop a plan.
- A work plan allows for systematic, complete planning at each level.
- The peripheral level can add to it for local activities/preparations.

10) Ensure good logistics

- Good logistics is one of the two major cornerstones for successful NIDs.
- Objective: for each round, every post/team should have at least:
 - 2–4 workers;
 - a vaccine carrier, thermos or flask;
 - enough OPV to cover the target population and extra vaccine for teams going to remote areas;
 - three immunization tally sheets for house-to-house immunization;
 - chalk to mark the houses visited for house-to-house immunization;
 - a map and itinerary of the catchment area for house-to-house immunization;
 - a banner to mark the post site;
 - posters/brochures indicating date of next round.
- Follow the standard schedule.
- Complete task list and logistics forms at each level.
- Make simple and consistent calculations at all levels.
- Ensure adequate cold space at all levels especially in provinces and districts.
- Make a distribution plan.
- Identify and notify ice makers in advance.
- Use maps.
- Identify enough transport for planning, transport of supplies, special strategies, supervision. Options include other ministries, private sector, NGOs and military.
- Understand different logistics requirements for urban versus rural planning.

11) Ensure good social mobilization

- Good social mobilization is one of the two major cornerstones for successful NIDs.
- Seek advice first from those with experience (e.g. the United Nations Children's Fund (UNICEF) and Rotary).
- Develop a plan for social mobilization.
- Develop simple key messages.
- Plan the opening ceremony well (high-level officials and media present).
- Seek participation of public figures in advance to ensure their availability.
- During NIDs, provide regular feedback to the press whose role is to mobilize the population and motivate the workers/volunteers.
- Develop motivational materials (e.g. banners, posters, brochures, T-shirts, letters from schools to parents).
- Develop media/press messages.
- Develop broadcaster's guide.
- Coordinate social mobilization committees at different levels (who is responsible for what).
- Remember to include social mobilization materials in the distribution plan.
- Implement local social mobilization activities (that is, the local level should not rely solely on the national level for social mobilization).
- Concentrate social mobilization more in urban areas because urban populations are more difficult to motivate to attend immunization campaigns.

12) Make special efforts for "special populations"

- Identify special populations (high-risk or hard-to-reach).
- Avoid stigmatization.
- Designate a person or subcommittee at each level to be responsible for "special" strategies.
- Plan the implementation of special strategies several days before NIDs or continue several days afterwards.
- In remote or hard-to-reach populations, take the opportunity to give other antigens.

13) Supervise at each level provincial, district, village, etc.

- Supervisors should understand and be involved in the planning process.
- Good supervisors are problem seekers and solvers.
- Good supervisors are reliable. They keep their promises!
- During visits, a supervisor should:
 - use a checklist;
 - carry extra supplies;
 - check task lists and logistics forms;
 - motivate and encourage.
- Concentrate most supervision with best supervisors in problematic and priority areas.
- Two to five days before NIDs, supervisors or designated personnel should go house-to-house “spot checking” (e.g. every fifth household) in high-risk areas to assess social mobilization (i.e. do people know about NIDs, when and where they will take place) and take corrective action if necessary.
- Conduct on-going supervision during NIDs.

14) Ensure efficiency and good services at post

- Implement training cascade on “how to plan and run an immunization post”.
- Develop a simple NID guide for districts and posts.
- Provide incentives for clients and workers (e.g. meals for workers, balloons for children).
- Be pro-active during NIDs! Use local volunteers, parents and children to seek out eligible children.
- Avoid long lines.
 - each post should have a target population of <250 children;
 - clients should be required to stand in line only once for all services.

There should be:

- proper distribution of posts;
- clear designation of responsibilities;
- enough volunteers to begin vaccinating early before crowds develop;
- enough space;
- crowd control;
- designated entry and exit and one-way flow;
- immunization on a “first come first served” basis;
- very simple tally sheets (do not record name and details of each child).

15) Plan to evaluate and use findings for future NIDs

- After NIDs, use summarized tally sheets to estimate coverage and wastage in all districts and provinces, and at the central level.
- Meet at all levels for qualitative evaluation of NIDs and lessons learned.
- Calculate or estimate costs at each level.
- Implement effective AFP surveillance to measure the impact of NIDs!

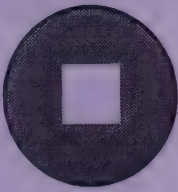
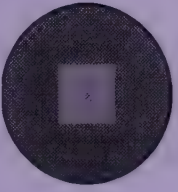
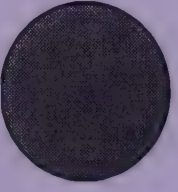

Annex 2:

Example of work plan

Field of activities	Tasks	Starting date	End date	Person in charge	Comments
Social mobilization	Contact BBC	20-3-00		Peter	Done 22-3-00
	Contact printers	15-4-00	17-4-00	Mary and Paul	
	Print posters	19-4-00	28-4-00	Mary	
Meetings	ICC	every 2 weeks		MOH	
	Team briefing	daily		Coordinator	
Logistics	Reception of vaccines at airport	10-2-00		John	Ask reconfirmation of date
	Repair truck	23-5-00	30-5-00	Paul	Delayed
	Cold chain inventory	25-3-00	10-4-00	Paul	Check existing inventory
	Send vaccines to the regions	10-6-00	12-6-00	Paul and John	
NID opening		18-6-00		WR and UNICEF rep.	

Annex 3:

Example of a supervisory checklist for a fixed immunization site

Name: _____	Location: _____	Post 1
1) Location of post (urban/rural): Date of visit: _____ Time of Visit: _____	U / R ____ / ____ ____ : ____	
2) Immunization post preparation (circle correct answer): <ul style="list-style-type: none"> Is the post in a good location: Is post well-marked: posters or banner: Are all teams members present: 	Yes/No Yes/No Yes/No	
3) Vaccine storage and administration (circle correct answer): <ul style="list-style-type: none"> Are vaccines kept in the coolest place: No. of unopened vials with VVM = 1 or 2: No. of unopened vials with VVM = 3 or 4: No. of empty vials: On vaccinator's open vial the VVM = (circle): <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 10px;"> <div style="text-align: center;"> <p>VVM = 1</p>  </div> <div style="text-align: center;"> <p>VVM = 2</p>  </div> <div style="text-align: center;"> <p>VVM = 3</p>  </div> <div style="text-align: center;"> <p>VVM = 4</p>  </div> </div> <ul style="list-style-type: none"> Does each child receive 2 drops of OPV: Are all OPV doses recorded on the tally sheet: Does there appear to be sufficient OPV: 	Yes/No _____ _____ _____ 1 2 3 4 Yes/No Yes/No Yes/No	
4) NIDs immunization post activities (circle correct answer): <ul style="list-style-type: none"> Is there an orderly procession of children: Are the children screened for age (<5yrs): Are volunteers looking for other children: What is the target population of the post: How many of target are already immunized: 	Yes/No Yes/No Yes/No _____ _____	
5) Health education instructions to mothers (circle correct answer): <ul style="list-style-type: none"> Are mothers told to inform others: Are mothers reminded of 2nd round: Are mothers reminded about routine EPI: Are mothers informed they need TT: 	Yes/No Yes/No Yes/No Yes/No	

Comments/Critical Problems on back (please include constraints expressed by post/team members):

Annex 4:

Questionnaire for parents on the site

These questions are to be used by supervisors to evaluate the effectiveness of the social mobilization strategies. Responses should be analysed and social mobilization strategies adjusted, as needed.

Most questions have possible responses of either 'correct' or 'not correct'. The latter includes all responses that are incomplete, over-complete (e.g. the answer to question 1 should be "polio" and not "polio and measles"), not given ("I do not know") or unclear.

Date: _____ Place: _____ Type of centre: urban / rural	
1) Do you know which disease is prevented by the vaccination today?	Correct <input type="checkbox"/> Not correct <input type="checkbox"/>
2) How did you hear about this immunization campaign?	
3) What are the dates of the present campaign?	Correct <input type="checkbox"/> Not correct <input type="checkbox"/>
4) For the first round only: Does your child (children) need to be immunized a second time?	Correct <input type="checkbox"/> Not correct <input type="checkbox"/>
5) What are the ages of children who should be immunized during this campaign?	Correct <input type="checkbox"/> Not correct <input type="checkbox"/>
6.1) Should all children of this age group be immunized?	Yes <input type="checkbox"/> No <input type="checkbox"/>
6.2) If "no", which children should not be immunized?	_____ _____ _____

Annex 5:

VVM Fact sheet

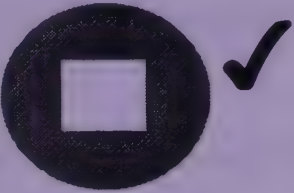
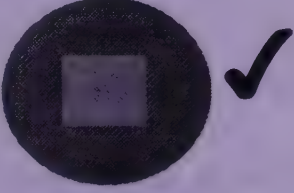
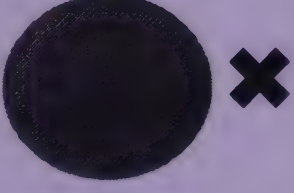
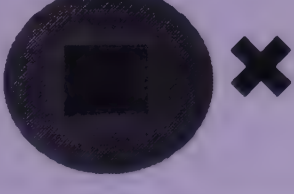
For a cheaper and more flexible cold chain during NIDs

Oral Polio Vaccine is the most heat sensitive of all EPI vaccines. However, cumulative heat exposure of OPV can now be monitored with the help of the vaccine vial monitor (VVM), which indicates if a vial can still be used.

OPV, supplied by WHO pre-qualified manufacturers, retains **satisfactory potency** for 48 hours at 37°C continuous ambient temperature. The VVM reaches the point where OPV should be discarded (the discard point) before that.

At 25°C ambient temperature the VVM reaches the discard point after **seven days**.

The VVM

	Inner square is lighter than outer ring. <u>USE</u> the vaccine , if expiry date not reached.
	Inner square is darkening, but still lighter than outer ring. <u>USE</u> the vaccine , if expiry date not reached.
	Discard point: Inner square matches the colour of outer ring. <u>DO NOT</u> use the vaccine.
	Beyond the discard point: Inner square is darker than outer ring. <u>DO NOT</u> use the vaccine.

Therefore, the VVM allows concluding at any time if OPV can be used **in spite of possible cold chain interruptions**. Health staff and management can act accordingly with corrective measures if required.

Besides these corrective actions, the VVM can be used pro-actively to **plan a more flexible and cheaper cold chain**, which is of particular importance during NIDs.

OPV can be safely used beyond the cold chain until the VVM reaches the discard point. The length of time depends on the ambient temperature and the quality of the cold chain till that point.

The advantages of the use of VVMs during NIDs are:

- Teams can go **further in time as well as geographically**, due to less bulky equipment and decreased dependence on re-supply of ice. Difficult access and weak cold chain cease to be reasons not to **immunize population groups usually missed during nids and the routine services**.
- Decreased burden of the cold chain: less freezing, smaller quantities of equipment.
- Decreased cold chain costs due to these factors.

The VVM must be pro-actively integrated in the NID planning:

- Teams **returning daily** to vaccine distribution points do **not need frozen icepacks** (some managers may decide to give one icepack per day merely for the ease of mind of the teams).
- Teams staying away longer do not have to be supplied with ice for the full length of their absence.
- All teams must be clearly instructed that **the absence of ice is not a reason to interrupt immunization**.

Experience in numerous countries has now convincingly confirmed the advantages of the VVM.

The potential benefits of the VVM during the NIDs highly depend on the quality of the cold chain before that.

Proper storage and transport of OPV is vital at all levels.

To gain confidence, EPI managers are encouraged to **test VVMs in their own region**.

To **convince health workers** of the merits, vials with VVMs must be brought to NIDs training workshops.

The Department of Vaccines and Biologicals was established by the World Health Organization in 1998 to operate within the Cluster of Health Technologies and Pharmaceuticals. The Department's major goal is the achievement of a world in which all people at risk are protected against vaccine-preventable diseases.

The Department replaces the former Global Programme for Vaccines and Immunization. Five teams implement its "bench-to-bush" strategy, which starts with the establishment of norms and standards, focusing on major vaccine and technology issues, and ends with implementation and guidance for vaccination programmes. The work of the teams is outlined below.

The Quality Assurance and Safety of Biologicals Team ensures the quality and safety of vaccines and other biological medicines through the development and establishment of global norms and standards.

The Vaccine Development Team coordinates and facilitates the development of new vaccines and immunization-related technologies.

The Vaccine Assessment and Monitoring Team assesses strategies and activities for reducing morbidity and mortality caused by vaccine-preventable diseases.

The Access to Technologies Team endeavours to reduce financial and technical barriers to the introduction of new and established vaccines and immunization-related technologies.

The Expanding Immunization Team (EPI) develops policies and strategies for maximizing the use of vaccines of public health importance and their delivery. It supports the WHO regions and countries in acquiring the skills, competence and infrastructure needed for implementing these policies and strategies and for achieving disease control and/or elimination and eradication objectives.

For further information please contact:

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